

## ABSTRACT

A gas sensor element consists of an oxygen pump cell, an oxygen monitor cell, and a sensor cell. The oxygen monitor cell  
5 measures the concentration of the oxygen molecules within the gas cavity which is fed back to the oxygen pump cell for keeping the concentration of oxygen molecules within the gas cavity constant. The sensor cell ionizes a specified oxygen containing gas and produce a signal indicative of the concentration of the specified  
10 oxygen containing gas within the gas cavity. The oxygen monitor cell and the sensor cell are disposed at substantially the same location in a direction of flow of the gasses, thereby minimizing a difference in concentration of oxygen molecules around the oxygen monitor cell and the sensor cell for eliminating an error of the  
15 signal outputted from the sensor cell arising from a variation in concentration of oxygen molecules within the gas cavity.